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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

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§ Examiner:

**John C. BYATT**

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§ Atty. Dkt. No.: **11916.0058.PCUS02**

Serial No.:

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Filed:

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For: **USE OF SINGLE NUCLEOTIDE  
POLYMORPHISM IN THE CODING  
REGION OF THE PORCINE  
LEPTIN RECEPTOR GENE TO  
ENHANCE PORK PRODUCTION**

§ §371 Application of International  
Application PCT/US2004/023050,  
§ filed 16 July 2004

**INFORMATION DISCLOSURE STATEMENT**

Mail Stop PCT  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In compliance with the duty of disclosure under 37 C.F.R. § 1.56, Applicants respectfully request that this Information Disclosure Statement be entered and that the references listed on attached Form PTO-1449 be considered by the Examiner and made of record.

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AP20 Rec'd PCT/PTO 02 FEB 2006

The present application is a §371 national application of PCT Application No. PCT/US2004/023050, filed July 16, 2004. The PCT Application is relied upon for an earlier filing date under 35 U.S.C. § 120. In accordance with Rule 37 C.F.R. § 1.98(d), a copy of the listed documents A1 and C1-C7 are not enclosed as they have been previously cited by or submitted to the U.S. Patent and Trademark Office in the International Search Report mailed March 21, 2005. A copy of the reference C8 is attached.

In accordance with 37 C.F.R. § 1.97(g), this Information Disclosure Statement is not to be construed as a representation that a search has been made or that no other possibly material information, as defined in 37 C.F.R. § 1.56, exists.

The present Information Disclosure Statement is being filed prior to the receipt of a first Office Action on the merits; and hence, is believed to be timely-filed in accordance with 37 C.F.R. §1.97(b). No fees are believed to be due in connection with the filing of this Information Disclosure Statement; however, if any fees should be due, the Commissioner is hereby authorized to deduct said fees from Deposit Account No. 01-2508/11916.0058.PCUS02.

Applicant respectfully requests that the listed documents be made of record in the present case.

Respectfully submitted,



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10/566941<sup>C8</sup>

IAP20 Res'd PCT/PTO 02 FEB 2006

## QTL and Leptin Receptor candidate gene analysis in pigs

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The leptin receptor gene (LEPR) is a candidate for traits related to growth and body composition, and it is located on SSC6 in a region where several QTL have been detected. The aims of this work were: a) to verify these QTL on a larger sample of animals and generations and b) to examine the effects of the LEPR variants on fatness and body composition traits, to evaluate the causality of the polymorphisms analyzed respect to the QTL. Three missense polymorphisms, located on exons 4 (T69M), 9 (D382A), and 14 (L663F), have been genotyped by pyrosequencing in a cross between Landrace and Iberian pigs comprising 33 F<sub>0</sub>, 70 F<sub>1</sub>, 418 F<sub>2</sub>, 86 F<sub>3</sub>, and 128 individuals coming from the backcross of four F<sub>2</sub> males with 24 Landrace females. Thirteen microsatellites and one SNP on *MC1R* gene were also genotyped. Traits analyzed were: backfat thickness (BFT), intramuscular fat percentage (IMF), and eye muscle area (MA). Four statistical models were used. For the QTL study, a QTL detection model with sex and batch as fixed effects and a two-QTL model were applied. For the candidate gene study, an animal model with the effect of LEPR alleles, and a QTL model including the effect of LEPR haplotypes as fixed effects were evaluated. The results support the presence of two QTL on SSC6, one affecting BFT (position 60 cM), and the other and more significant one affecting BFT, IMF, and MA (position 130 cM). Results also confirm the implication of LEPR gene variants on the variability of these traits. The Iberian LEPR haplotype increases BFT and reduces MA. Functional studies are required to explain the effects observed.

Form PTO-1449 (modified)		Atty. Docket No. 11916.0058.PCUS02	Serial No. <b>80/566941</b>
List of Patents and Publications for Applicant's INFORMATION DISCLOSURE STATEMENT (Use several sheets if necessary)		Applicant Cheryl J. KOJIMA; Fengxing DU; Michael D. GROSZ; John C. BYATT	
		Filing Date:	Group:
U.S. Patent Documents <i>See Page 1</i>	Foreign Patent Documents <i>See Page 1</i>	Other Art <i>See Page 1</i>	

### U.S. Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Name	Class	Sub Class	Filing Date of App.
	A1	6,458,531	10/01/02	Rothschild et al.	435	6	

### Foreign Patent Documents

Exam. Init.	Ref. Des.	Document Number	Date	Country	Class	Sub Class	Translation Yes/No
	B1						

### Other Art (Including Author, Title, Date Pertinent Pages, Etc.)

Exam. Init.	Ref. Des.	Citation
	C1	A. Stratil et al., "HpaII and RsaI PCR-RFLPs Within an Intron of the Porcine Leptin Receptor Gene (LEPR) and Its Linkage Mapping," <i>Animal Genetics</i> , 29:405-406 (1998).
	C2	A.L. Vincent et al., "Rapid Communication: A Restriction Fragment Length Polymorphism in the Porcine Leptin Receptor (LEPR) Gene," <i>Journal of Animal Science</i> , 75(8):2287 (1997).
	C3	Z. Tatiana Ruiz-Cortes et al., "Porcine Leptin Receptor: Molecular Structure and Expression in the Ovary," <i>Molecular Reproduction and Development</i> , 56:465-474 (2000).
	C4	Database EMBL Online, "Sus Scrofa Transmembrane Leptin Receptor (OBR) mRNA, OBR-db allele, partial cds," Database Accession No. AF167719 (2000).
	C5	Agnieszka Korwin-Kossakowska et al., "The Effect of the Polymorphism of Leptin (LEP), Leptin Receptor (LEPR) and Osteopontin (OPN) Genes on Selected Reproduction Traits of Synthetic Line 990 Sows," <i>Animal Science Papers and Reports</i> , 20(3):159-168 (2002).
	C6	Marek Switonski et al., "Searching for Genes Controlling Fatness Traits in Pigs—A Review," <i>Animal of Science Papers and Reports</i> , 21(2):73-86 (2003).
	C7	Database Biosis Online, "Genes for Reproductive Traits in Pigs: A Review!", <i>Biosciences Information Service</i> , Database Accession No. PREF200100323124 (2000) and <i>Prace I Materiały Zootechniczne</i> , 57:25-37 (2000).
	C8	Christina Ovilo et al., "QTL and Leptin Receptor Candidate Gene Analysis in Pigs," ISAG Proceedings, Abstract (September 11-16, 2004).

EXAMINER:

DATE CONSIDERED:

EXAMINER: INITIAL IF REFERENCE CONSIDERED, WHETHER OR NOT CITATION IS IN CONFORMANCE WITH MPEP609; DRAW LINE THROUGH CITATION IF NOT IN CONFORMANCE AND NOT CONSIDERED. INCLUDE COPY OF THIS FORM WITH NEXT COMMUNICATION TO APPLICANT.